CHAPTER XIV

THE PRINCIPLES OF CUTTING

By THE EDITOR

MUCH interest is taken in systems of cutting by tailors, but less attention is paid to principles. This is strange, because the same principles underlie all systems, and without a knowledge of the former the latter are of little avail. The word " principle " may be attached to so many phases and features that to deal with everything to which the word might apply would need extensive space. Therefore, only two or three subjects are selected for special notice, the others being included in the general articles.

BALANCE

Balance is the most important principle in cutting, and it is as well first to define it. It is the equality or just proportion of weight, form, length, etc. ; equipoise or counterpoise.

In tailoring, balance is generally defined as the relative length of back and front or of two sides. It is sometimes thought of as the relative length of the back and front of a coat—that is, the height from the depth of scye line up to the nape at back, and from the same line up to the neck point in front ; or, in lieu of the latter, from the front of scye to the neck-point. The general hang of a garment is also referred to as the balance.

Balance may be called, as has been said, equipoise or counterpoise ; forces acting in harmony ; parts arranged in unison. The sections of a garment are in equilibrium when they severally act and re-act on each other with equal force. When there is perfect unison between the various parts of a coat and also with the figure it has to cover, then there is balance *in excelsis.*

This principle crops up in every garment and in almost every section, and enters into cutting, trying-on, and making. The poise of a garment is often destroyed by careless making.

We have it on the authority of Holy Writ that a false balance is an abomination, and it is certainly the cause of most of the defects which trouble a cutter.

As a general definition, balance may be said to be the harmonious arrangement of the front and back, or two sides, with the attitude of the figure; this applying to coats, vests, trousers, sleeves, etc.

There are several kinds of balance. The first may be called ideal balance. This is the size or balance of a draft, pattern, or figure, reckoned by a proportion or division of the breast measure, or by a strictly proportionate system of mensuration. This is the balance a system would give if drafted out for a proportionate figure. Every system has its equality of ratios, whether worked out by direct measures, shoulder measures, or breast measurement.

Another type of balance may be called natural balance. This is where the balance of pattern or draft is equal at back and front; where the front and back sections show an equal proportion, although they may not agree with the breast measure. For instance, a pattern for a 36″ breast man might show 8½″ depth of scye and an equal decrease of front; or a 9½″ depth of scye and an equal increase of front. There would still be equipoise, but it would not be the ideal balance as we understand it. Although the lengths are equal, they are not in an ideal ratio with the breadths.

A third type may be named specific balance. It is obvious that we may have a draft, pattern, or garment where there is neither the ideal balance nor the equipoise which has been called natural balance. The front and back lengths may not tally; the scales tilt up or down, as it were; and yet the draft, pattern, etc., would be correct for a specific figure. There is the just proportion but not the equal proportion. This would be the case in various figures, such as the stooping, erect, etc. But the simplest example is that of a lady's coat, where there is a considerable difference between the back and front lengths, necessitated by the demands of the figure.

An important point is the effect that suppression has upon balance. The length at back and front may be very evenly adjusted above the breast line; and yet the equilibrium may be upset by an excess of, or incorrect arrangement of, suppression. Suppression, or the distribution of material at waist, is vital to the balance of front and back.

What makes the question of balance less simple than it otherwise would be is that not only must it vary with different figures but also with different garments. A waistcoat requires a very long back balance; a body coat also needs a long back balance. The balance of a jacket varies according to style: a close-fitting, well-suppressed lounge needs a longer back balance than one of a loose straight-hanging fashion. A long front balance is necessary for an overcoat at any time; and often for style reasons a short back balance must be infused.

In ladies' coats the correct standard of balance is obtained, not by giving an equality of length at back and front, but a just proportion. Compared with a man's coat, a woman requires one short in the back balance. So far as style influencing balance is concerned, the same remarks apply to ladies' as to gentlemen's garments. A loose sac will require a short back balance to distribute the material correctly; and a close-fitting coat will need, relatively, a long back balance.

Cutters who specialise in ladies' garments (and often those who are engaged in the wholesale trade), not only pay attention to general balance, but also to that particular balance which governs sections. Especially is this the case in a coat with many seams, where balance-marks are placed at the waist and other parts, and also in the sleeves.

Balance is a factor in sections of a garment, and notably with sleeves. The hang of a sleeve means a lot in comfort and appearance; and it may be affected in various ways. The distance between the top of hindarm and forearm may be altered by raising or lowering the points; but the balance can be tilted one way or another without touching those points. It is possible to swing the bottom of forearm backward or forward by inserting or taking out a wedge at hindarm; or by a suitable arrangement of lines to draft a sleeve in harmony with those changes. The pitching of sleeves often decides the balance. While it is true that a badly-hanging sleeve may be due to faulty pitching, it is also true that many good sleeves owe much to an intelligent adjustment in that direction.

In trousers we have various kinds of balance. Openness and closeness is really a sort of balance. There is, too, the change brought about by cutting a forward front and its concomitant, an open or crooked seat. These are general types. There is the special one necessitated by the stooping figure, which calls for a short front and long back; or the erect one which demands a long front and a short back. There is also the particular balance, required for a corpulent figure, of extra length of front and corresponding shortness of back, accompanied by a more open cut in the legs.

Then there is the balance of the topside on the underside, that the parts may lie "fair," for which marks or "nicks" are placed. The tilting of the scales one way or the other by faulty manipulation will often have disastrous effects. And there is the deliberate change of balance-marks for prominent calves, or for prominent thighs and calves.

There are many ways of altering balance. One may draft out a coat and impose a change, or take a carefully adjusted pattern and make variations from it. For a longer front balance an addition can be made across the shoulder, or the side-seam point lowered. For a short back balance a piece may be taken off at neck and shoulder, or the side-seam point of back raised. For a short front balance the shoulder or the side-seam may be utilised; and for a long back balance the neck and shoulder may be raised, or side-seam point lowered. Again, there is the wedge method of varying the harmony fore and aft, in accordance with the necessities of the figure.

In a body coat the length of forepart at front may be varied for the type of man who bends forward or backward, while the skirt section can also be regulated.

In a finished garment the methods of altering the balance are restricted; not that the same changes could not be made as in a pattern, but some alterations would appreciably lower the profits on an order. In a made-up coat, then, the side-seam is utilised, when possible, and the back or forepart passed up or down as the case may be.

Very briefly, some of the effects of incorrect balance may be indicated. A long back balance causes a looseness about the top of back and a closeness on the hips. A short back balance will cause the coat to stand away at the hips and to fall away at the back of neck. A long front balance produces a garment which falls away at front and hangs away at the back; if buttoned, the extra length would show itself at the breast. A short front balance lifts the coat up at front and makes it uncomfortable. These defects would also affect the scye at back and front.

Waist Suppression

Waist suppression, or the distribution of width at waist, is not merely a matter of size. Its effect is much more than local. Like so many features in cutting and fitting, it proves that sections are interdependent, and that cutting is a matter of co-ordination. A garment is a sort of organism, each part having some bearing on the others. You cannot isolate a section, or even a principle, that seems to have only a restricted jurisdiction. A shoulder is altered—and breast, scye, and other parts are changed. You tighten at one place and throw looseness at another. That a coat may fit admirably until the sleeves are in has become a cutting-room platitude; a collar may turn a fit into a convulsion.

Therefore waist suppression has more ramifications than appear on the surface. It affects the blades and the hips, and acutely influences balance. Incorrect distribution of width at waist throws a coat entirely out of gear; a garment may be large enough in actual size and yet not meet in front. Cuts in the forepart, by the way, often make a coat tight-fitting—unless an extra allowance has been made. Sometimes shoulders have been carefully adjusted; and yet blades are full, front of scye tight, and shoulders creased, through over-hollowing at waist. The fact is that the waist is a vital point, and too much consideration cannot be given to it. At the risk of repetition, it may be said that the upper and lower sections are mutually dependent; and if they are not cut in harmony with each other, and in unison with the figure, trouble ensues.

Reverting to the question of sizes and suppression: some figures are hollow at back, others are hollow at sides, and others still may recede at front, and yet all may be the same size. From these varieties or inequalities in the hollowness of the figure it will be seen immediately that suppression is dependent on the form of the waist and its relation to other parts of the figure, independently of the actual circumference. To give concrete instances: one may be quite normal in size of waist and yet be fairly flat at back, with either extra hollow at sides, or a receding front waist; or extra hollow at back with a forward front. Some men with increased waist measure require just as large suppressions at sides and back as a normal figure. Big men sometimes require comparatively large hollowings, while men whose waist girth is normal may need them small. The shaping of the back depends on the attitude of the figure, while that at the side is governed by the form of the waist. To sum up: we come to the axiom that suppression is affected by attitude and form rather than size.

It has been said above that suppression governs balance; but it is also true that balance governs suppression. Over-suppression will throw the balance out, but incorrect balance will nullify or modify suppression. As an instance of this, it may be pointed out that the suppression may be quite correct for the figure at the back, and yet, let the back balance be short, and the coat will not fit in to the waist.

It has often been said that the principle on which waist suppression should be based is, to find provision for prominences, to create fullness. This statement or definition is open to argument. As a rule the hips and breast are larger than the waist, it is true; but when cutting a coat it is made large enough at hips and breast and then taken in to fit indentations of waist.

Presuming that you had cut a perfectly straight or loose-fitting sac for a man and then wished to make it close-fitting at waist, you would carve out, shape, and suppress—not to find receptacles for prominences and curves, but for fitting into or indenting the hollows. The same thing applies if you cut a close-waisted coat to start with.

That to take in or suppress unduly will throw a round or fullness at another place may be admitted, but not that it is the primary object of waist suppression. If you take the case of the suppression between back and side-body, and say that it throws a round over the blades, one may ask whether this could not be done by overlapping the side-body as was done in the old days.

And that brings me to an interesting point. If you look at old systems, such as the "Old Thirds," which were drafted with closed parts, what is the conclusion to which you are inevitably led? That the problems of waist suppression, as we understand them to-day, are the outcome of the modern method of drafting coats in the square. If you draft a coat with closed parts it is then merely a question of size and balance.

The following methods of distribution of width have been given in respect to corpulency:

(1) When the waist measure only increases and the breast and seat remain normal, the increase should go to the front.

(2) When the seat and waist increase proportionately from the normal, the increment should be added at the sides only.

(3) When the seat only increases half the amount of disproportion at the waist, the increase should be distributed equally at front and sides.

(4) When the seat only increases and the waist and breast remain normal, the side-body indentation should be reduced and a cut taken out of front waist.

It will be as well to consider the methods adopted in a few systems of dealing with suppression. A well-known method, first published over fifty years ago, was founded on a combination of height and width measures, following Wampen in this respect. The authors direct special attention to the arrangement of the elements of height and width in the system, as governing the depression at waist. This important point is based upon the degree of affinity existing between the two particular quantities of length of waist and size of breast or scale, and varies according to their difference. The waist length must be taken with the greatest care between the collar-bone and the point on a line with the greatest indentation of waist.

To regulate this hollow of waist in the system, the two above-mentioned quantities must be found, and then, by comparison, ascertain the smaller of the two; this is the one always to be used as the standard for finding the exact depression.

In the case of 24″ breast and 17″ natural waist length, the latter, being the smaller quantity, the twelfth of that, 1⅜″, would give the depression. If 16½″ breast and 18″ natural waist, the breast, in this case being the smaller, would be used.

But we may fairly ask: Is this principle a correct one? If you follow it out to its logical conclusion it means, often, that the taller the man the greater the depression, irrespective of the size of waist. Height should not enter into this subject at all.

The old method adopted by Wampen and many others before and since was to take the 30″ waist and 36″ breast as a standard, or, rather, 6″ less waist than breast as a strictly proportionate size. Modern authors have taken 4″ less as a proportionate standard, such as 36″, 32″.

It may also be noted that some men have discarded this as a base from which to work. It has been argued that, although these may be the dimensions of a standard figure, the dimensions of a figure are not the mathematical standard. The square is the mathematical standard, therefore the square of the breast or an equality of breast and waist is the real basis or standard of departure. Then one-third of the excess would be placed at side and two-thirds at front.

The accompanying diagram illustrates general methods of arranging suppression.

From the centre of back at A mark forward two-thirds of the scale to C.

Square down from C to the waist at K.

Measure up the back D to E and the side-body F to H; place that amount at K and continue to J half waist plus 1″.

Then from K measure forward to L at centre of front line the other half plus 1″.

The same principle is adopted in an alternative method.

Mark forward from back-seam at A half scale to B.

Square down from B to I at waist.

In this case make the back parts one-third of waist plus 1″; and the front from I to L two-thirds of waist plus 1″.

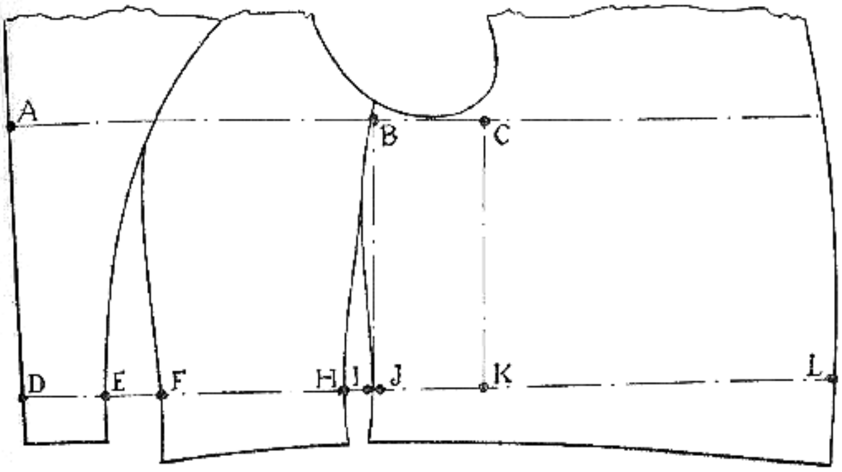


DIAGRAM 31.

STRAIGHTNESS AND CROOKEDNESS, OR THE LOCATION OF THE NECK-POINT

There is nothing which has caused so much discussion in the tailoring trade as the position of the neck-point. The reason for this is that so many have thought there should be a fixed position which, when found, would solve a number of difficulties. But it may be said at once that it is impossible definitely, rather than approximately, to locate the neck-point.

Geometricians tell us that a point is that which has position but not length, breadth, or thickness; but the unfortunate neck-point has not an assured position, and I'm afraid nothing can be done to give it permanent stabilisation. Its position is governed by many factors, and because of varying influences must always remain approximate. If everything could be arranged with mathematical exactitude, there would be less art in tailoring.

The nearest approach to a solution of the problem is by a sweep from the front of scye intersecting a line squared up at a certain position in advance of the front of scye; or of a sweep from the front of scye intersected by another sweep from the centre of front on the breast line—the latter having a quantity added sufficient for the working up of the fronts.

If the centre of front is arranged correctly, and, following that, the position of the front of scye by the across-chest or other measure, and the length of front shoulder by the front shoulder measure, then the basis of a good-fitting front is assured. The position of the line squared up in advance of front of scye (or the amount added for second sweep) is flexible because of the varying requirements.

Three Governing Factors

The position of the neck-point is influenced by the diameter of neck, prominence of breast, and the amount of manipulation that is to go into the garment. These, in their turn, are governed by subsidiary causes. The point is this: the breast is round, but the centre of breast is not. If the right length of cloth be given up the centre of front to shoulder, there must be some superfluous cloth either near the scye or at the front edge; and one must decide where this is to go. A straight cut forces the cloth towards the scye; a crooked one pushes it towards the front. If the latter, then it may be removed by means of vees or manipulation.

Of course it must not be forgotten that the exact position of neck-point is also influenced by the type of figure in various ways. If a man is broad across the chest the front of scye will be backward; the converse holds good in case of a narrow front.

Again, supposing the figure is long in the neck, the front shoulder measure will be increased and the neck-point raised, independently of other considerations, and vice versa with a low neck.

To move the neck-point forward or backward, in a straight horizontal line, is not true straightness or crookedness; this partakes more of openness and closeness.

In forwarding or receding, the arc should be pivoted from front of scye; therefore a straighter cut is slightly depressed and a crooked one raised.

The location of the neck-point is affected, as has been said, by the amount of manipulation to go into a coat. This is governed by various considerations. If a customer is prominent in the breast and erect, the neck-point must be receded, to give more length to the centre of front; this extra length allows for working up, or taking out vees, to give form to the breast.

The class of trade is another feature which has a bearing on the subject. In some high-class trades it is notorious that a more crooked cut is desirable, because of the extra manipulation. But there are also some famous houses which cut their shoulders decidedly straight, short, and narrow—to allow for a lot of straining out with the iron. Where little is paid for making and little manipulation expected, a straight cut should be given.

Makes of material should also affect the placement of the neck-point. Some materials do not lend themselves to working up, hence the necessity for a straight shoulder.

The style of coat will also directly influence the cut. For instance, if a coat is to button up to the neck, it will take a less crooked shoulder than if it rolled to the waist. A coat that is always to be worn unbuttoned requires a relatively crooked cut, and for this reason: A straight cut, as stated above, forces the material towards the scye, while a crooked cut throws it on the front; obviously an unbuttoned coat, having no support in the way of fastening, needs the treatment which will not tend to pull it away from the breast. That explains why dress coats require a receding neck-point.

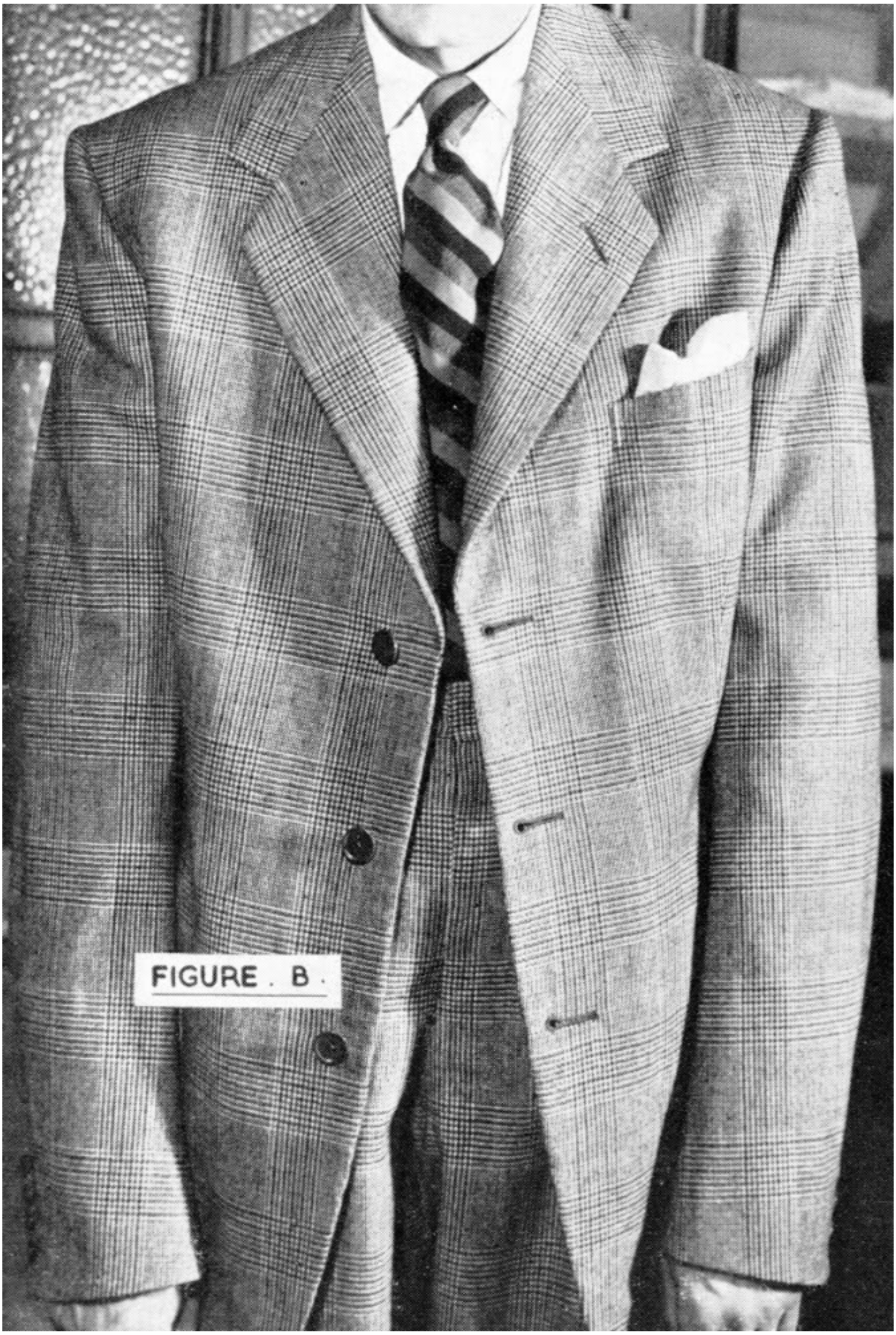
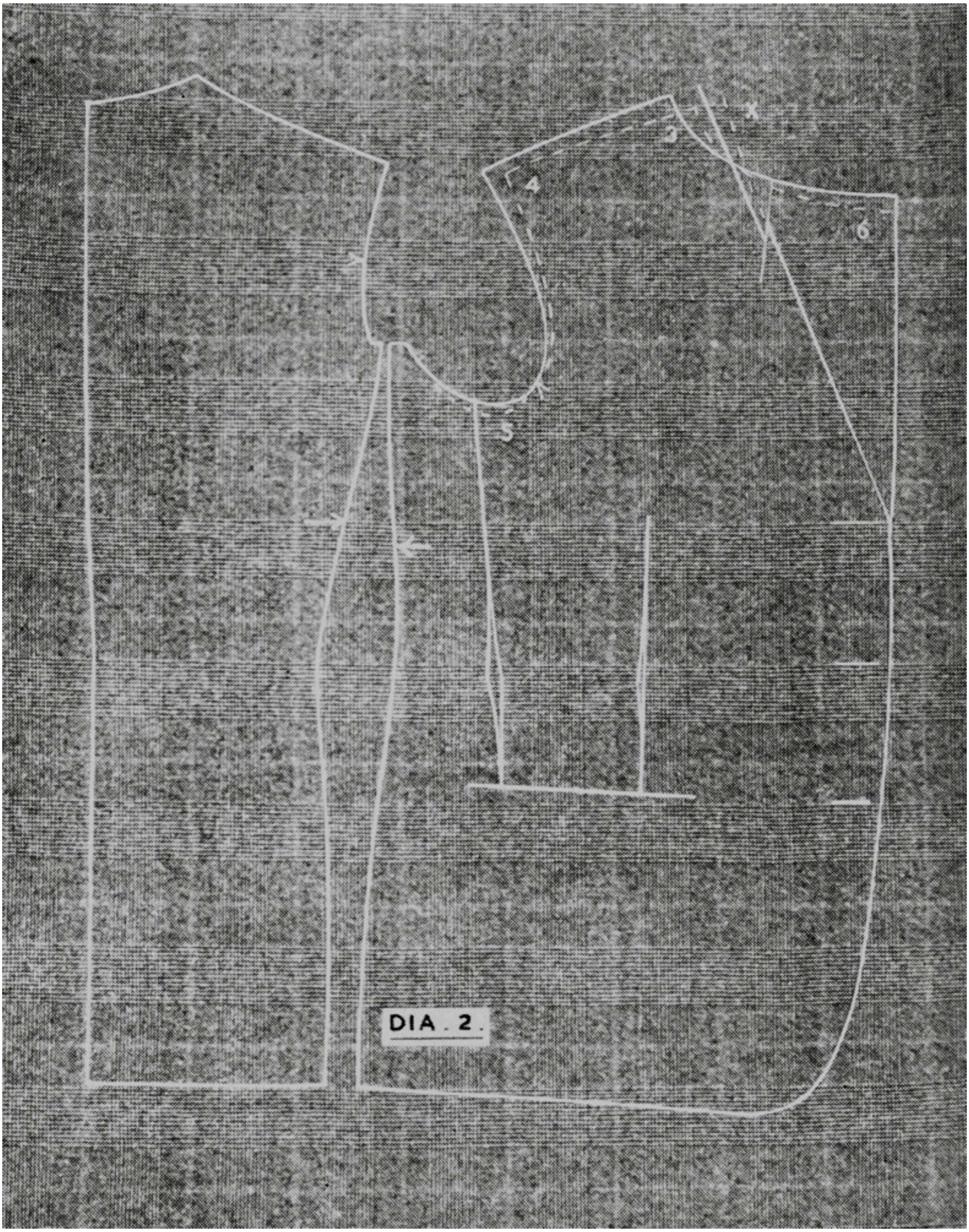


FIGURE . B .



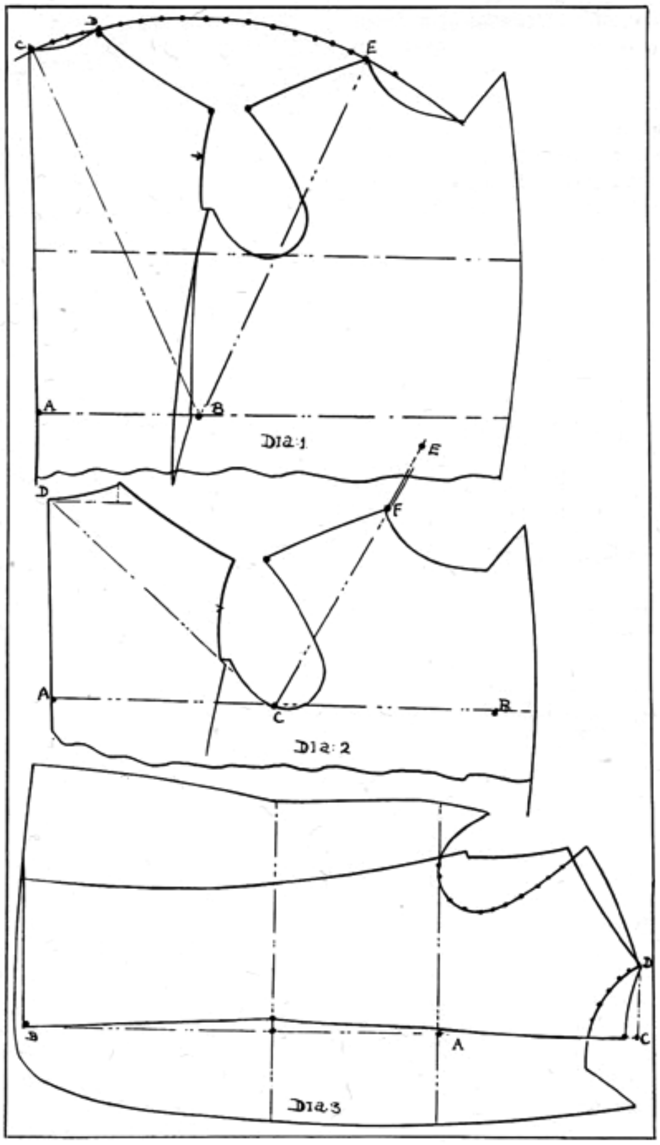
DIA . 2.

Figure B shows a jacket which experienced cutters will describe as a " swinger." This is an example in which the back is not at fault, the cause of the swinging effect being a too-long front balance. The method of rectification is indicated by the dash lines at 3, 4, 5 and 6 on Diagram 2. If the coat is in a basted state this alteration can be supplemented (as it should be) by a moving forward of the lapel crease line as at X, and an addition to the front edge. In a finished coat, this is not possible—neither is the drop at 6. The crease line can be forwarded but the lapel width will have to be that much narrower. Which emphasises the need for careful figuration and fitting. In a plain cloth, the alteration might be improved by passing up the forepart on the side-seam, as indicated by the arrows.

Testing the Balance of a Coat

"W.H.H.", one of our subscribers, asks us to give him a method of testing the balance of a coat pattern. We have pleasure in presenting three methods used by cutters for the purpose of testing for the normal balance of a coat.

No. 1 is a well-known method for garments made under general rules of production. Mark in from the centre of back at the waist as A to B one-fifth of breast, and sweep from the back neck, C, as illustrated. For the normal balance, the arc should cut through the neck point, E. If it is necessary to vary for the erect figure, then raise and recede neck point from E, making up length of shoulder at scye end. This operation is termed crookening the shoulder. If it is necessary to vary for the stooping figure then lower neck point from E and at the same time advance towards the neck, reducing at scye end for adjustment of length to correspond with back shoulder. This operation is termed straightening the shoulder.



No. 2 illustrates a method used by many cutters employed in the wholesale trade. A to B equals half the breast plus 2½ins. C is located midway between A and B. Measure D to C and mark off that quantity from C to E. E to F should equal same as back neck for normal balance.

No. 3 illustrates a method used by cutters in good class trades where every attention is paid to the making up of the garment by hand-sewing. Line A B C indicates the half breast line. Lay the back down to this line as shown, and the neck points wil be fair together at D in the case of the normal balance.